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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,143

11/18/2003

Kevin M. Durocher

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EXAMINER

VIGUSHIN, JOHN B

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ART UNIT

PAPER NUMBER

2841

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/716,143	DUROCHER ET AL.	
	Examiner	Art Unit	
	John B. Vigushin	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 30-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-52 is/are allowed.
- 6) ☒ Claim(s) 30-32, 35, 36 and 41 is/are rejected.
- 7) ☒ Claim(s) 33, 34 and 37-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1103/18 Nov 2003</u> | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> |

Continuation of Attachment(s) 6). Other: 1 copy of JP05-347434 A with English language Abstract.

DETAILED ACTION

Rejections Based On Prior Art

1. The following references were relied upon for the rejections hereinbelow:

Giedd et al. (US 5,753,523)[†] Amante (US 5,065,502)

[†]Made of record in Applicant's IDS filed November 18, 2003.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 30-32, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Giedd et al.

As to Claim 30, Giedd et al. discloses: a flexible substrate 33; a resistive region 31 formed on the flexible substrate 33 and having a first end and a second end; and conductive terminals 32 coupled to each of the first end and the second end (Fig. 3; col.6: 48-53).

As to Claim 31, Giedd et al. further discloses flexible substrate 13 comprises a polyimide material (col.7: 60-63).

As to Claim 32, Giedd et al. further discloses the resistive region 31 has a resistance in the range of 300 kohms - 1 Mohm (within the temperature range of 210-250 K; see Fig. 5 and col.9: 3-7).

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As to Claim 35, Giedd et al. further discloses the resistive region 31 is formed at a temperature of less than 200°C (i.e., the polymer material is baked at a temperature of 168°C then subjected to ion implantation; see col.10: 10-19).

As to Claim 36, Giedd et al. further discloses resistive structure 31 does not comprise a serpentine structure (Figs. 3 and 4K; col.6: 54-56).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giedd et al. in view of Amante.

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I. Giedd et al. does not teach a light emitting diode (LED) electrically coupled to each of the conductive terminals 32 but does teach that the resistor films 31 exhibit "remarkable stability when subjected to high power densities and current densities" (col.9: 62-65).

II. Amante discloses the use of printed resistors for controlling the voltage across an LED (col.3: 34-36 and col.4: 26-29).

III. Since both Giedd et al. and Amante et al. apply resistive material between electrical contacts of a substrate, wherein the Giedd et al. resistor is designed to be stable over a current and power range including high power and current values, and Amante further teaches an application for such resistors as voltage limiters or controllers for ensuring the reliable operation of an LED, then the application of the resistor as a voltage controller for an LED, as taught by Amante, would have been readily recognized as an application for very stable and reliable resistor in the pertinent art of Giedd et al.

IV. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to electrically couple an LED to each of the conductive terminals to which the resistor of Giedd et al. is also coupled in order to provide voltage control for the LED, as taught by Amante, through the stable, hence reliable, resistor material of Giedd et al.

Allowable Subject Matter

7. Claims 42-52 have been allowed.

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8. Claims 33, 34, 37 and 38-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Claims 33, 34, 37 and 38 each individually state the allowable limitations in combination with the other limitations of the claims, respectively. Claims 39-40 depend from Claim 38.

As to Claims 42-52, patentability resides in *a resistor formed on the second side of the flexible substrate, wherein the resistor is electrically coupled between each of the contact regions*, in combination with the other limitations of base Claim 42.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Greenlaw (6,932,518 B2) discloses a flexible substrate 120 having a first side and a second side; a light emitting diode 102 (LED) having signal contact leads 112; said LED coupled to the first side of flexible substrate 120 and electrically coupled through signal contact leads 112 to signal traces 114 by way of resistors 162 which are each series connected between the signal contact leads 112 of the LED and the signal traces 114. Greenlaw does not teach contact regions on the second side of flexible substrate 120 that are distinct from resistors 162. Rather, the resistors 162 are the

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contact regions. Therefore, Greenlaw does not teach the limitation in Applicant's Claim 42 of a resistor formed on the second side of the flexible substrate, wherein the resistor is electrically coupled **between** each of the contact regions.

b) Okazaki (JP05-347434 A) discloses, in Fig. 1, an organic resin package substrate 11 (paragraph [0016]) having an LED 12 mounted on the top side and a resistor 13 mounted on the bottom side, wherein the LED 12 is electrically coupled to **one** contact region on the bottom side to which one electrode of the resistor 13 is also coupled and the LED 12 is thereby connected to the resistor in series (Fig. 2). Therefore, Okazaki does not teach the limitation in Applicant's Claim 42 of a resistor formed on the second (bottom) side of the flexible substrate, wherein the resistor is electrically coupled **between** each of the contact regions.


c) Harrah (US 6,936,855 B1) discloses current-limiting resistors used in electrostatic discharge (ESD) circuitry for LEDs wherein the resistors and the ESD circuitry are located on the same side of the carrier substrate—i.e., "submount" 140 or 160—as the LED 150 (Figs. 10 and 11; col.22: 9-34).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 571-272-1936. The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John B. Vigushin
Primary Examiner
Art Unit 2841

jbv
November 12, 2005